

What is claimed is:

1. A converting apparatus, comprising:
 - a document inputting device inputting information
 - 5 of a structured document that is written with a set of hierarchical elements, and composed of a plurality of records each including one element or more;
 - a joining device generating a new element by joining contents of elements relatively at a same position among
 - 10 two records or more of the structured document;
 - a generating device generating a new record that includes the new element and inherits a relative position relationship of elements in the two records or more;
 - a converting device converting the structured
 - 15 document by replacing the two records or more with the new record; and
 - a document outputting device outputting the structured document after being converted.
- 20 2. The converting apparatus according to claim 1, further comprising:
 - a key inputting device inputting a search key; and
 - a searching device searching the structured document after being converted with the search key,
 - 25 extracting a character string corresponding to a position

of a detected character string from contents of an element in a certain record when the character string corresponding to the search key is detected from contents of another element in the certain record, restoring a record before being converted, which includes the search key, from the detected character string and the extracted character string, and outputting the restored record as a search result.

- 10 3. A converting apparatus, comprising:
 - a document inputting device inputting information of a structured document written with a set of hierarchical elements;
 - a storing device storing the information of the structured document;
 - 15 a joining device generating a plurality of new elements by joining, as synthesis targets, content of each element included in a first combination of elements that successively exist side by side in a level immediately below a certain element and have a same element name, and content of each element included in a second combination of elements that have a same element name in a certain level lower than the elements of the first combination, elements in each level on a route
 - 20 from the elements of the first combination to the certain
 - 25

level having a same element name, in the structured document;

a generating device generating a synthesized substructure that includes the plurality of new elements,
 5 and inherits a relative position relationship of original elements among the plurality of new elements;

a duplicating device generating a duplication of an unjoined element below a new element included in a synthesized substructure generated from an element
 10 higher than the unjoined element;

a deleting device deleting an unnecessary original element;

a converting device converting the structured document into a structured document of a synthetic type
 15 configured by a synthesized substructure by using said joining device, said generating device, said duplicating device, and said deleting device; and

a document outputting device outputting the structured document of the synthetic type.

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4. The converting apparatus according to claim 3, wherein

said generating device generates the synthesized substructure if a combination of elements that
 25 successively exist side by side and have a same element

name in two levels or more on the route to the certain level is not found.

5. The converting apparatus according to claim
5 3, wherein

said joining device divides the second combination of the elements into a plurality of groups each composed of a predetermined number of elements, and specifies the synthesis targets based on the predetermined number
10 of elements included in each of the groups.

6. The converting apparatus according to claim
3, wherein

said joining device generates contents of the new
15 elements by inserting a delimiter between two joined contents.

7. The converting apparatus according to claim
6, wherein

20 said joining device consecutively inserts the delimiter in the contents of the new elements if content of an element which becomes the synthesis target is lacking.

25 8. The converting apparatus according to claim

6, further comprising:

a key inputting device inputting a search key; and

a searching device comparing a character string
between two delimiters, which is included in contents
5 of elements within the structured document of the
synthetic type, with a character string of the search
key, obtaining an order of a delimiter preceding a
character string corresponding to the search key when
the character string corresponding to the search key
10 is detected from contents of elements within a certain
synthesized substructure, extracting a character string
between a delimiter corresponding to the order and a
next delimiter in contents of another element in the
certain synthesized substructure, restoring a
15 corresponding portion of the structured document before
being converted from the detected character string and
the extracted character string, and outputting the
restored portion as a search result.

20 9. A computer-readable storage medium on which
is recorded a program for causing a computer to execute
a process, said process comprising:

generating a new element by joining contents of
elements relatively at a same position among two records
25 or more of a structured document that is written with

a set of hierarchical elements and composed of a plurality of records each including one element or more;

generating a new record that includes the new element and inherits a relative position relationship
5 of elements in the two records or more; and

converting the structured document by replacing the two records or more with the new record.

10 10. A propagation signal for propagating a program to a computer, the program causing the computer to perform:

generating a new element by joining contents of elements relatively at a same position among two records or more of a structured document that is written with
15 a set of hierarchical elements and composed of a plurality of records each including one element or more;

generating a new record that includes the new element and inherits a relative position relationship of elements in the two records or more; and

20 converting the structured document by replacing the two records or more with the new record.

11. A converting apparatus, comprising:

document inputting means for inputting
25 information of a structured document that is written

with a set of hierarchical elements, and composed of a plurality of records each including one element or more;

joining means for generating a new element by
5 joining contents of elements relatively at a same position among two records or more of the structured document;

generating means for generating a new record that includes the new element and inherits a relative position
10 relationship of elements in the two records or more;

converting means for converting the structured document by replacing the two records or more with the new record; and

document outputting means for outputting the
15 structured document after being converted.